DOCUMENT RESUME

ED 026 050 JC 680 514

By-Boggs, John R.; Herrscher, Barton R.

A Developmental Research Plan for Junior College Remedial Education. Number 2: Attitude Assessment.

California Univ., Los Angeles. ERIC Clearinghouse for Junior Coll. Information.; Regional Education Lab. for the Carolinas and Virginia, Rougemont, N.C.

Pub Date Nov 68

Note-21p.

EDRS Price MF-$0.25 HC-$1.15

Descriptors-Attitudes, *Attitude Tests, *Junior Colleges, Remedial Instruction, *Research Design

An interest in student behavior is the principal reason for assessing attitudes, since definitions of attitude generally tie attitude to behavior by conceptualizing attitude, in part, as a predisposition to respond. This paper describes a systematic procedure for assessing student attitudes and attitude changes by constructing and administering a scale for attitude measurement. The four steps in constructing such a scale (the determination of a referent and a population, the collection of possible items, the screening of items, and the selection of screened items for the final scale) are described in detail, and the use of the scale is explained. Remedial students and classes are used as examples, but the procedure is applicable to the attitudes of vocational students, the total student body, teachers, parents, etc. toward admission policies, student personnel services, curricula, and other referents. (MC)

ED026050

EDUCATIONAL RESOURCES INFORMATION CENTER

ERIC Clearinghouse for Junior College Information

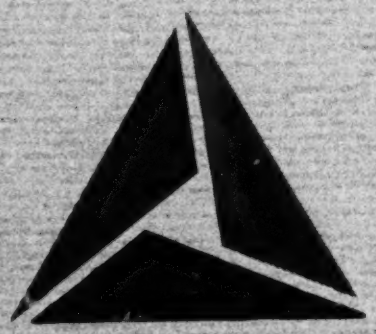
UNIVERSITY OF CALIFORNIA, LOS ANGELES

TOPICAL PAPERS

A DEVELOPMENTAL RESEARCH PLAN FOR JUNIOR COLLEGE REMEDIAL EDUCATION

NUMBER 2: ATTITUDE ASSESSMENT

JC 680 514



published in cooperation with the

REGIONAL EDUCATION LABORATORY FOR THE CAROLINAS AND VIRGINIA

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

A DEVELOPMENTAL RESEARCH PLAN

FOR JUNIOR COLLEGE REMEDIAL EDUCATION

Number 2: Attitude Assessment

John R. Boggs
and
Barton R. Herrscher
Program Associates
Regional Education Laboratory
for the Carolinas and Virginia

ERIC Clearinghouse for Junior College Information
Graduate School of Education and the University Library
University of California
Los Angeles, 90024

November 1968

This Topical Paper was prepared pursuant to a contract with the Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official Office of Education position or policy.

Topical Paper No. 2
November, 1968

INTRODUCTION

This topical paper, the second in the series, presents a plan for developing a scale on which student attitude may be assessed. It is a follow-up to an earlier paper in which a design for measuring motivation was introduced. Both schemes are for use in junior college programs of remedial education although they may also be applicable in other areas.

The topical paper series furthers the Clearinghouse's junior college research information dissemination thrust. Other clearinghouse research-related publications include the monograph series and Junior College Research Review, both of which are published by the American Association of Junior Colleges. In addition to preparing these types of materials, the Clearinghouse collects, indexes, and abstracts research-related materials for input to Research in Education, a U.S. Office of Education publication.

The Regional Education Laboratory for the Carolinas and Virginia is a co-sponsor of this paper. Our thanks to John R. Boggs and Barton R. Herrscher, Program Associates with the Lab, and to the U.S. Office of Education's ERIC project for making this production possible.

Arthur M. Cohen
Principal Investigator and Director
ERIC Clearinghouse for Junior
College Information

A DEVELOPMENTAL RESEARCH PLAN
FOR JUNIOR COLLEGE REMEDIAL EDUCATION
Number 2: Attitude Assessment

Statement of the Problem

Although remedial classes and programs have been established by junior colleges, there is little evidence that the classes and programs have led to academic success for remedial students (8). This lack of success is shown by a predominance of low grades in remedial English and mathematics classes and by high drop-out rates.

The topical papers in this series describe research procedures for exploring possible explanations of the problem. The first topical paper presented a research procedure for assessing the relevance of motivation; this one, the relevance of attitude. A third will consider concept formation, an aspect of mental ability.

Although the procedures need not be limited to the remedial problem, their primary purpose is to obtain empirical data to give direction to the modification of remedial education.

Development and Use of an Instrument for Measuring Attitude

Without much effort, one can remember an expression or two of negative attitude toward a college class or the topic of a course. Possible examples of such expressions of negative attitude are:

1. "I couldn't wait to get out of that class."
2. "We heard the same canned dialogue ten times."
3. "For me that subject had no worth whatsoever."
4. "That class was unfair."
5. "The teacher was a real nut."

The actual content of these statements is of less interest or concern to an instructor than the attitude reflected.

On this concern, Krathwohl (6: 15-16) states that, "Undoubtedly almost every teacher is on the alert for evidence of desirable interests, attitudes, and character development." He further states, "...most of this is the noting of unusual characteristics or dramatic developments when they are almost forced on the teacher's attention." Favorable student enthusiasm, disciplinary problems, and rebellions are the types of attitudinal developments noted and acted on by college staff. The less dramatic student attitudes, such as those expressed above, may or may not be noted. Even when noted, student attitudes are rarely assessed systematically (6:16).

Although "attitude" is referred to in educational goals and objectives (e.g. to develop an appreciation of...) and attitudinal problems are often of concern, there is a reluctance to assess or measure them systematically. One form of reluctance, described by Thurstone (11:1) as "a bad habit", is the idea that a human trait that can be measured or represented numerically is really not important. One can easily ask how you can represent a person's attitude with a number. The conviction that an attitude cannot be represented by a number is probably an overemphasis on the number and too little emphasis on or knowledge of what the number represents and how it is obtained.

Reluctance also results from the belief that the appropriate attitude changes occur automatically when an instructor does what is necessary to meet his cognitive objectives. This belief, that a favorable attitude accompanies the mastery of a subject, should prevent many instructional complications, but the evidence supporting it is lacking (5). In fact, Krathwohl (6:20) mentions a possible reverse situation:

> The authors of this work hold the view that under some conditions the development of cognitive behaviors may actually destroy certain desired affective behaviors and that, instead of a positive relation between growth in cognitive and affective behavior, it is conceivable that there may be an inverse relation between growth in the two domains. For example, it is quite possible that many literature courses at the high-school and college levels instill knowledge of the history of literature and knowledge of the details of particular works of literature, while at the same time producing an aversion to, or at least a lower level of interest in, literary works.

Reluctance to assess or even consider attitudes systematically is also reflected by the statement, "a student's attitude is his own private business." For several reasons, this statement appears to have limited validity. First, individuals freely express many of their attitudes. Attitudes that are expressed are not considered private business. Second, when an individual does not want to express an attitude, the reason is not likely to be a wish for privacy, but the presence of an authority figure. In such situations, free expression of attitude can be facilitated by allowing anonymity and promoting a noncoercive atmosphere. Finally, whether or not a student's attitude is his private business is irrelevant when one cannot assume that college experiences do not affect student attitude. The responsible institution and instructor will want to know what the effects are and how to have a directive influence on them. This knowledge is necessary if attitudes and attitude changes related to school and to institutional objectives are not to be left to random chance.

The principal reason for assessing attitudes is interest in student behavior. Although definitions for the term "attitude" vary, they generally tie attitude to behavior by conceptualizing "attitude", in part, as a predisposition to respond (10:2). Shaw states, "If the attitude of a person toward a given object, or class of objects, is known, it can be used in conjunction with situational and other dispositional variables to predict and explain reactions of the person to that class of objects" (10:1).

The purpose of this paper is to describe a systematic procedure for assessing student attitudes and attitude changes. It is a modification of one originally developed by Thurstone (11) and is essentially a way to construct a scale for attitude measurement. The data obtained with the scale can be used for answering such questions as:

1. How positive is student attitude toward this subject or class?
2. How does student attitude change during this course?
3. Is there a relationship between student attitude and performance?
4. How do student groups differ in attitude?
5. Does a specific instructional modification promote a positive student attitude?

Procedure

Four steps are required for constructing the scale: (1) the determination of a referent and a population, (2) the collection of possible statements, (3) the screening of statements, and (4) the selection of screened statements for scale items.

Step 1: Determining a Referent and a Population

This procedure lends itself to a variety of references and populations, depending on the interest of the person developing the scale. The referent may be a college subject, a particular class, an institutional practice or procedure, etc. In our example, the referent will be a remedial English class; the population will be remedial students. Once the referent and population are determined, the purpose of the scale can be specifically stated. In the example, it is to measure the attitude of remedial students toward a remedial English class.

Step 2: Obtaining Possible Statements

Essentially, the present procedure assesses student attitude via the students' acceptance or rejection of statements that represent varying degrees of positiveness and negativeness toward the referent. Before collecting statements from which the scale items will be selected, one must consider the range of the scale. For the example, a seven-point scale will be used. Point four represents a neutral attitude; points to the right of four represent positive attitudes; those to the left, negative attitudes.

1	2	3	4	5	6	7
extremely negative	very negative	slightly negative	neutral	slightly positive	very positive	extremely positive

Other scales, with any odd number of points, are possible. Scales with nine and eleven points will provide greater discrimination between students, but the difficulty of obtaining discriminating items increases. Items are more easily obtained for scales with five or three points, but the ability to discriminate decreases. For these reasons, a seven-point scale was chosen.

With the scale's range determined, statements can be collected or constructed or both. At least five, preferably more, statements perceived appropriate for each point on the scale are needed. Statements are collected by asking students to write statements that they would make if they were extremely positive, very positive, ... or extremely negative toward a remedial English class. Statements constructed by the person developing the scale may be mixed with statements of the students. Possible statements with perceived scale values are:

Statement	Perceived Value
1. To take this class again is about the last thing I would ever want to do.	1 (extremely negative)
2. I doubt that remedial English is worth the effort.	2 (very negative)
3. Students who don't like this course shouldn't have to take it.	3 (slightly negative)
4. I guess this class is just part of going to school.	4 (neutral)
5. I can't see anything wrong with this class.	5 (slightly positive)
6. Remedial English should be compulsory at all schools.	6 (very positive)
7. I believe this class will help me with everything I want to do.	7 (extremely positive)

The possible scale values of statements are considered to insure a complete range of statements. The actual scale values for the statements are determined later in the procedure.

After 35 or more possible statements have been selected, they are screened to determine which will be items in the final attitude scale.

Step 3: Screening Statements

Statements are screened so that items for the attitude scale can be selected from those that receive consensus on their degree of positiveness or negativeness. A statement that represents a very positive attitude by some and a neutral or very negative attitude by others can not be a dependable index for attitude measurement. The first step in screening is to eliminate or modify statements that obviously do not meet these criteria:

1. Statements should not be unnecessarily long.
2. Statements should be written so that they can be completely endorsed or rejected. The following statement could be eliminated: "Although everything seems O.K., I still don't like this class."

3. Statements should not be didactic in nature. Example: "There are different ways of teaching remedial English."

4. Statements should not be double-barreled unless they can be used as neutral statements. Example: "I find good and bad things about this class."

5. Statements should not be irrelevant. Example: "I don't like to come to school at 8:00 in the morning."

6. Statements should refer to present, not past, attitudes.

7. Statements should not apply to limited groups of students. Example: "I like this class because I want to write poetry."

8. Statements should not contain confusing concepts. Example: "This class is superfluous."

If there is any doubt about whether or not a statement should be eliminated or modified, retain it for the second screening step.

Judges are required for the second step, to rate each item according to the degree of positiveness or negativeness shown. In other words, the judges are to put a "7" next to statements that are perceived as extremely positive, a "6" next to statements perceived as very positive, etc. Judges should preferably be picked from the population for which the attitude scale is being developed, in this case, remedial students. This insures a commonality of meaning between the judges and the students who will eventually respond to the final attitude scale. At least 30 judges should be used. For populations over 300, a 10 per cent random sample can be considered a sufficient maximum number.*

After the statements are presented in random order to the judges for rating, a table showing all scale ratings assigned to each statement is constructed. For example:

---

* For how to obtain a random sample, see (1: 9-11).

Statements

Judges	1	2	3	4	5	6	7 etc.
I	..	..	5	..	4	..	..
II	..	..	5	..	4	..	..
III	..	..	5	..	5	..	..
IV	..	..	6	..	6	..	..
V	..	..	5	..	4	..	..
VI	..	..	5	..	3	..	..
VII	..	..	4	..	3	..	..
VIII	..	..	5	..	2	..	..
IX	..	..	5	..	4	..	..
X	..	..	5	..	5	..	..

etc.

Each table entry represents the attitude value given to a particular statement by a particular judge. According to this sample table, judge Number IV perceived that statement Number three represented a "very positive" attitude toward the remedial English class.

Since a judge may not understand the directions or may rate the statements in an irresponsible manner, his results should be inspected. If ratings obviously suggest that a judge used a reverse scale (a seven for a one, a six for a two, etc.), his ratings should be eliminated from the table. Also, if he assigns the same rating to a third or more of the statements, his ratings should be eliminated.

With the completion of the above table, a statistic can be applied to each column of numbers to assess the degree of consensus for each statement. This statistic, the standard error of the mean (S_{em}) can be calculated with the following formula:

$$S_{em} = \sqrt{\frac{(A-B)/C}{D}}$$

Using the ratings for statement three, the calculations for each value of the above formula are explained below.

For the value A, each number in the column is squared and the squared numbers are added. This sum is multiplied by the number of ratings -- in this case, ten.

RATINGS FOR STATEMENT #5	RATINGS FOR STATEMENT #5 SQUARED
5	25
5	25
5	25
5	25
6	36
5	25
5	25
4	16
5	25
5	25
	Sum = 252

$A = 10(252)$

$A = 2520$

To obtain B, the ratings are added and the resultant sum is squared.

$B = 50^2$

$B = 2500$

C is equal to the number of ratings for the statement, multiplied by that number minus one.

$C = 10(10-1)$

$C = 90$

D is equal to the number of ratings for the statement.

$$D = 10$$

Substituting values A through D in the formula, the standard error of the mean is found to be 0.148.

$$S_{em} = \sqrt{\frac{(A-B)/C}{D}} = \sqrt{\frac{(2520-2500)/90}{10}}$$

$$S_{em} = \sqrt{\frac{0.22}{10}} = \sqrt{0.022}$$

$$S_{em} = 0.148$$

The ratings for statement five (see above table) are not as consistent as those for statement three. This indicates that there was less consensus on the attitude reflected by statement five. The standard error of the mean will be larger for statements with less judge consensus. This is shown by the fact that, when the same calculations are completed for statement five, the resultant value is 0.365.

$$S_{em} = \sqrt{\frac{(A-B)/C}{D}} = \sqrt{\frac{(1720-1600)/90}{10}}$$

$$S_{em} = \sqrt{\frac{1.33}{10}} = \sqrt{0.133}$$

$$S_{em} = 0.365$$

When the S_{em} is calculated for each statement, it is time to eliminate the statements without sufficient judge consensus. If a statement has a S_{em} larger than 0.250, it is eliminated; if the S_{em} is 0.250 or less, the statement is retained for final selection of scale items.

Step 4: Selecting Statements for Scale Items

Before selecting statements for scale items, the actual scale values are calculated for the retained statements. This value is the mean of the ratings assigned to a statement. For example, the scale value for statement three (see table above) is 5.00.

$$\text{Mean} = \frac{\text{Sum of ratings}}{\text{Number of ratings}} = \frac{50}{10}$$

$$\text{Mean} = 5.00$$

The next step is to rank the retained statements according to their scale values:

Statement	Scale value	Statement	Scale value
1	1.30	9	4.88
2	2.12	10	4.90
3	2.53	11	5.23
4	2.95	12	5.61
5	3.34	13	6.11
6	3.65	14	6.25
7	3.72	15	6.92
8	4.29	16	6.94

The purpose in selecting particular statements for scale items is to make sure that a complete range of attitudes is represented. Statements are selected so that no gaps appear in the scale and each level of positiveness or negativeness has equal representation. The steps for selecting scale items are:

1. Choose a maximum positive and a maximum negative statement. The former should have a scale value of 6.5 or greater; the latter, a value of 1.5 or less.

2. Choose intermediate statements. These are chosen so that the differences between all successive scale values are as nearly equal as possible, and the difference between any two successive scale values is not greater than 1.0.

Using the above statements and scale values and following the two steps, the resultant attitude scale could be composed of statements, 1, 2, 4, 6, 8, 10, 12, 14, and 16. These items produce a scale with a maximum of 6.94, a minimum of 1.30, and an approximate distance of 0.7 between successive items. Given enough retained statements, an additional statement for each appropriate scale value present can be added. This would provide the advantage of doubling the number of statements in the scale. If the above steps cannot be followed because necessary scale values are lacking, more statements need to be obtained and Step 3 repeated. When the items are put in random order, the attitude scale is complete.

Sample Scale

Instructions: Check the statements with which you agree the most. Put checks in the spaces provided.[1]

1. Students who don't like this course shouldn't have to take it. ( )

2. I believe this class will help me with everything I want to do. ( )

3. I doubt that remedial English is worth the effort. ( )

4. I guess this class is just part of going to school. ( )

5. Remedial English should be compulsory at all schools. ( )

6. I can't see anything wrong with this class. ( )

7. To take this class again is about the last thing I would ever want to do. ( )

---

[1] For information concerning instructions, see page 14.

Administering and Scoring

The attitude scale is designed for use with groups, not individuals. When it is administered, the important consideration is how to remove any possible threat the students might feel. Besides letting students know that there is a sincere interest in honest student opinion, one can:

1. Whenever possible, allow for anonymous responses
2. Allow the students to mark and collect the attitude scales while no authority figure is in the classroom
3. Use counseling personnel for administering the scale.

These are only suggestions; other procedures can be created for the particular situation.

The attitude scale is easily scored. Students are asked to check the item or items with which they agree the most. A student's score is the mean of the scale values for the items checked. For example, if the items checked have the values 2.23, 3.85, and 3.41, the score is

$$\frac{2.23+2.85+3.41}{3} = 2.83$$

If a student checks only one item, his score is the scale value for that item. For longer scales, those with 12 or more items, all students are asked to check three items.

The attitude scale may possibly contain items that bias student scores, such as one that tends to be checked regardless of which other items are checked. A positive item that tends to be checked when negative items are checked is an example. These items usually indicate a concept different from the one the scale was designed for and should be replaced.

Observational Studies

The scale is applicable to many questions of interest concerning student attitude:

1. How does a random sample of remedial English students score on the attitude scale?
2. How does a random sample of students starting remedial English classes compare with a random sample of those completing classes?
3. Is there a difference between the scores of students who drop remedial English and those who don't?
4. Which remedial English instructors tend to have students who score high or low on the scale?
5. What are the characteristics of attitude scores obtained from students receiving different grades in remedial English classes?

These questions are answered by administering the attitude scale to the appropriate groups of students. Depending on resultant scores, various directions are appropriate. As an example, if the scores from a random sample of remedial English students reflect a predominantly negative attitude, an inquiry to determine the reason might follow. If the students of a given instructor tend to score high, his specific instructional procedures or materials could be used in other classes. The following semester, after this modification, another random sample of students could be tested to see if attitude scores have become more positive or if they have reached a previously set objective.

Summary

This paper describes a procedure for developing a scale to measure student attitude. Although remedial students and remedial English classes are used as examples of population and referent, the procedure can be applied elsewhere. Vocational students, the total student body, teachers, and parents, are other possible

populations; admission policies, student personnel services, curricula, are other possible referents. For whatever attitude is to be assessed, the procedure provides an objective, systematic tool.

REFERENCES

1. Boggs, John R. A Developmental Research Plan for Junior College Remedial Education. Los Angeles: ERIC Clearinghouse for Junior College Information, 1968.
2. Ferguson, George A. Statistical Analysis in Psychology and Education. New York: McGraw-Hill Book Company, 1966.
3. Hovland, C. I., Harvey, O. J., and Sherif, M. "Assimilation and Contrast Effects in Reactions to Community and Attitude Change." Journal of Abnormal and Social-Psychology 55: 244-252; 1957.
4. Hovland, C. I., Janis, I. L., and Kelley, H. H. Communication and Persuasion. New Haven: Yale University Press, 1953.
5. Jacob, Phillip E. Changing Values in College. New York: Harper, 1957.
6. Krathwohl, David R., Bloom, L., and Masia, Bertram B. Taxonomy of Educational Objectives; the Classification of Educational Goals, by a Committee of College and University Examiners. New York: David McKay Co., Inc., 1964.
7. Krech, D., Crutchfield, R. S., and Ballachey, E. L. Individual in Society. New York: McGraw-Hill Book Company, 1962.
8. Roueche, John E. Salvage, Redirection, or Custody? Remedial Education in the Community Junior College. Washington, D.C.: American Association of Junior Colleges, 1968.
9. Secord, Paul F., and Backman, Carl W. Social Psychology. New York: McGraw-Hill Book Company, 1964.
10. Shaw, Marvin E., and Wright, Jack M. Scales for Measurement of Attitudes. New York: McGraw-Hill Book Company, 1967.
11. Thurstone, L. L., and Chave, E. J. The Measurement of Attitude. Chicago: The University of Chicago Press, 1929.